

RECEIVED
CENTRAL FAX CENTER
DEC 26 2006

IN THE CLAIMS:

1.-19. (Cancelled)

20. (Currently Amended) The fusion device of claim ~~19~~ 27, wherein said porous biocompatible material comprises a composite comprising an open-celled substrate having interconnected porosity, said open-celled substrate infiltrated with a metal.

21. (Previously Presented) The fusion device of claim 20, wherein said open-celled substrate is a carbonaceous material.

22. (Previously Presented) The fusion device of claim 20, wherein said open-celled substrate is a carbon foam.

23. (Previously Presented) The fusion device of claim 20, wherein said metal comprises a group VB metal.

24. (Previously Presented) The fusion device of claim 23, wherein said metal is tantalum.

25. (Currently Amended) The fusion device of claim ~~19~~ 27, wherein said porous biocompatible material has a modulus of elasticity approximately equal to a modulus of elasticity of human bone.

26. (Cancelled)

27. (Previously Presented) A fusion device for facilitating arthrodesis in a disc space between adjacent vertebrae, comprising:

Response to final Office Action
Application Serial No. ~~10/644,252~~
Inventor: Thomas Zdeblick et al
Filing Date: August 20, 2003

Page 3 of 11

an elongate body having a length and defining external threads extending substantially entirely along said length, said external threads being circumferentially interrupted by a pair of oppositely disposed truncated side walls arranged substantially diametrically opposite one another to define a pair of threaded arcuate side walls extending along said length, said pair of threaded arcuate side walls are tapered along a substantial portion of said length of said elongate body, said elongate body at least partially formed of a porous biocompatible material to permit bone tissue ingrowth into said elongate body.

28. (Previously Presented) A fusion device for facilitating arthrodesis in a disc space between adjacent vertebrae, comprising:

an elongate body having a length and defining external threads extending substantially entirely along said length, said external threads being circumferentially interrupted by a pair of oppositely disposed truncated side walls to define a pair of threaded arcuate side walls extending along said length, said pair of threaded arcuate side walls are tapered along a substantial portion of said length of said elongate body, said elongate body at least partially formed of a porous biocompatible material to permit bone tissue ingrowth into said elongate body; and

wherein said elongate body defines a hollow interior, said pair of threaded arcuate side walls each defining at least one opening extending therethrough in communication with said hollow interior.

29. (Previously Presented) The fusion device according to claim 28, further comprising a bone growth inducing material disposed within said hollow interior.

30. (Cancelled)

31. (Currently Amended) ~~A fusion device for facilitating arthrodesis in a disc space between adjacent vertebrae, comprising:~~

~~an elongate body having a length and defining external threads extending substantially entirely along said length;~~ The fusion device of claim 27, wherein said elongate body having has

a first diameter adjacent a first end thereof and a larger second diameter adjacent an opposite second end thereof, ~~said elongate body including opposite outer walls that are substantially continuously tapered between said first and second ends so as to define a taper angle therebetween with said outer walls disposed entirely within said taper angle to maintain the adjacent vertebrae in an angular relationship relative to one another when said elongate body is implanted within the disc space, said elongate body at least partially formed of a porous biocompatible material to permit bone tissue ingrowth into said elongate body, said elongate body having a substantially solid configuration and comprising a unitary, single piece structure for disposition within the disc space.~~

32.-33. (Cancelled)

34. (Previously Presented) A fusion device for facilitating arthrodesis in a disc space between adjacent vertebrae, comprising:

an elongate body having a side wall extending generally along a longitudinal axis and defining a hollow interior and at least one opening extending laterally through said side wall in communication with said hollow interior, said elongate body being substantially continuously tapered along said length and at least partially formed of a porous biocompatible material to permit bone tissue ingrowth into said elongate body, said porous biocompatible material being a composite comprising an open-celled substrate having interconnected porosity, said substrate infiltrated with a metal.

35. (Previously Presented) The fusion device of claim 34, wherein said open-celled substrate is a carbonaceous material.

36. (Previously Presented) The fusion device of claim 34, wherein said metal comprises a group VB metal.

37. (Previously Presented) The fusion device of claim 34, wherein said elongate body

has a length and defines external threads extending substantially entirely along said length.

38. (Previously Presented) A fusion device for facilitating arthrodesis in a disc space between adjacent vertebrae, comprising:

an elongate body having a hollow interior and at least one opening in communication with said hollow interior, said elongate body having a length and defining external threads extending substantially entirely along said length, said external threads being circumferentially interrupted by a pair of oppositely disposed truncated side walls to define a pair of threaded arcuate side walls extending along said length and tapered along a substantial portion of said length, said at least one opening extending through a corresponding one of said threaded arcuate side walls, said elongate body at least partially formed of a porous biocompatible material to permit bone tissue ingrowth into said elongate body.

39. (Previously Presented) A fusion device for facilitating arthrodesis in a disc space between adjacent vertebrae, comprising:

an elongate body having a side wall extending generally along a longitudinal axis and defining a hollow interior and at least one opening extending laterally through said side wall in communication with said hollow interior, said elongate body having a length and including a pair of oppositely disposed truncated side wall portions and a pair of arcuate side wall portions extending therebetween along said length and tapered along a substantial portion of said length, said elongate body at least partially formed of a porous biocompatible material to permit bone tissue ingrowth into said elongate body.

40. (Previously Presented) A fusion device for facilitating arthrodesis in a disc space between adjacent vertebrae, comprising:

an elongate body having a length and including a pair of oppositely disposed arcuate side walls extending along said length and tapered along a substantial portion of said length and adapted for engagement with the adjacent vertebra, said elongate body including a pair of truncated side walls extending between said arcuate side walls, said elongate body having a

hollow interior and at least one opening extending through at least one of said arcuate side walls and said truncated side walls in communication with said hollow interior and being at least partially formed of a porous biocompatible material to permit bone tissue ingrowth into said arcuate side walls.

41. (Previously Presented) The fusion device of claim 40, wherein said porous biocompatible material is a composite comprising an open-celled substrate having interconnected porosity, said substrate infiltrated with a metal.

42. (Previously Presented) The fusion device of claim 41, wherein said open-celled substrate is a carbonaceous material.

43. (Previously Presented) The fusion device of claim 41, wherein said metal comprises a group VB metal.

44. (Currently Amended) A fusion device for facilitating arthrodesis in a disc space between adjacent vertebrae, comprising:

an elongate body having a length and including a pair of oppositely disposed arcuate side walls extending along said length and adapted for engagement with the adjacent vertebrae, said arcuate side walls defining external threads extending substantially entirely along said length and tapered substantially entirely along said length, said arcuate side walls being arranged substantially diametrically opposite one another, said elongated body including a pair of truncated side walls arranged substantially diametrically opposite one another and extending between said arcuate side walls, said elongate body at least partially formed of a porous biocompatible material to permit bone tissue ingrowth into said arcuate side walls, ~~said elongate body having a substantially solid configuration and comprising a unitary, single-piece structure for disposition within the disc space.~~

45. (Currently Amended) ~~The fusion device of claim 44, further comprising~~ A fusion device for facilitating arthrodesis in a disc space between adjacent vertebrae, comprising:

an elongate body having a length and including a pair of oppositely disposed arcuate side walls extending along said length and adapted for engagement with the adjacent vertebrae, said arcuate side walls defining external threads extending substantially entirely along said length and tapered substantially entirely along said length, said elongated body including a pair of truncated side walls arranged substantially diametrically opposite one another and extending between said arcuate side walls, said elongate body at least partially formed of a porous biocompatible material to permit bone tissue ingrowth into said arcuate side walls.

46.-49. (Cancelled)

50. (Currently Amended) A fusion device for facilitating arthrodesis in a disc space between adjacent vertebrae, comprising:

an elongate body having a length and including a pair of oppositely disposed arcuate side walls arranged substantially diametrically opposite one another and extending along said length and adapted for engagement with the adjacent vertebrae, said elongated body including a pair of truncated side walls arranged substantially diametrically opposite one another and extending between said arcuate side walls, said elongate body being substantially continuously tapered along said length to define a substantially conical configuration and being at least partially formed of a porous biocompatible material to permit bone tissue ingrowth into said arcuate side walls, ~~said elongate body having a substantially solid configuration and comprising a unitary, single piece structure for disposition within the disc space.~~